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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/539,088	06/15/2005	Kenichi Miyoshi	L9289.05145	7120

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EXAMINER

MITCHELL, DANIEL D

ART UNIT	PAPER NUMBER
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2419

MAIL DATE	DELIVERY MODE
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12/24/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/539,088	Applicant(s) MIYOSHI, KENICHI	
	Examiner DANIEL MITCHELL	Art Unit 2419	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on 9/9/2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 7-12 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 8, 10 and 12 is/are allowed.
- 6) ☒ Claim(s) 7, 9, 11 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 6/15/2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Amendment

1. Applicant's Amendment filed on September 9, 2008 has been entered. No claims have been amended. Claims 1-6 are canceled. Claims 7-12 have been added. Claims 7-12 are still pending, with claims 7, 8, 11, and 12 being independent.

2. **Claims 7, 9, and 11** are rejected under 35 U.S.C. 103(a) as being unpatentable over Miya et al. (US Patent No. 6,351,458 B2) hereinafter referred as Miya in view of Dent (US Patent No. 6,680,928 B1), hereinafter referred as Dent.

Regarding claim 7, Miya discloses a radio transmission apparatus in a multicarrier CDMA system that transmits a signal by spreading the signal on a plurality of subcarriers, the apparatus comprising **col. 1 lines 15-21 teaches**

multicarrier CDMA system:

a weighting section that assigns weights which vary from one spreading code to another and from one chip to another, to the spread subcarrier signals **col. 3**

lines 62-67 and col. 4 lines 1-2 teaches a multiplier section that assigns various weights to the different codes; and

a transmission section that multiplexes the weighted and spread subcarrier signals and transmits the multiplexed signal **col. 4 lines 3-18 teaches a transmission portion that multiplexes the weighted data.**

However Miya does not expressly disclose wherein weighting factors to be used for the weighting comprise weighting factors in which orthogonality among spreading codes is secured when a radio reception apparatus performs despreading using factors so as to obtain maximal ratio combining.

Dent discloses **col. 9 lines 60-65** teaches orthogonal weighting functions that are used to spread the signal. Dent also discloses **col. 10 lines 23-36** receivers that use orthogonal despreaders to despread the signal. It is noted that applicant includes the intended use to "obtain maximal ratio combining" and is therefore not given patentable weight.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the teachings of Miya to include the use of orthogonal despreaders. One would be motivated as such in order to utilize that channel with the strongest signal **col. 3 lines 48-60.**

Regarding claim 9, Miya discloses comprising one of a radio communication terminal apparatus and radio communication base station apparatus **col. 2 lines 1-10.**

Regarding claim 11, Miya discloses a radio transmission method for a multicarrier CDMA system that transmits a signal by spreading the signal on a plurality of subcarriers **col. 1 lines 15-21 teaches multicarrier CDMA system,**

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the method comprising the steps of:

assigning weights which differ from one spreading code to another and from one chip to another, to the spread subcarrier signals **col. 3 lines 62-67 and col. 4 lines 1-2 teaches a multiplier section that assigns various weights to the different codes**; and multiplexing the weighted and spread subcarrier signals and transmitting the multiplexed signal **col. 4 lines 3-18 teaches a transmission portion that multiplexes the weighted data.**

However Miya does not expressly disclose wherein weighting factors to be used for the weighting comprise weighting factors in which orthogonality among spreading codes is secured when a radio reception apparatus performs despreading using factors so as to obtain maximal ratio combining.

Dent discloses **col. 9 lines 60-65** teaches orthogonal weighting functions that are used to spread the signal. Dent also discloses **col. 10 lines 23-36** receivers that use orthogonal despreaders to despread the signal. It is noted that applicant includes the intended use to "obtain maximal ratio combining" and is therefore not given patentable weight.

See similar motivation as claim 7.

Allowable Subject Matter

3. Claims 8, 10, and 12 are allowed.

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4. The following is an examiner's statement of reasons for allowance:

The prior art Miya et al. (US Patent No. 6,351,458 B2) hereinafter referred as Miya in view of Dent (US Patent No. 6,680,928 B1), hereinafter referred as Dent fail individually and combined to anticipate or render obvious the claim combination of the method/apparatus for a multicarrier CDMA system that transmits a signal by spreading the signal on a plurality of subcarriers.

The note prior art fails to teach weighting factors to be used for the weighting including weighting factors from which a signal having a maximum eigenvalue is extracted when a radio reception apparatus decomposes a matrix into eigenvalues using a spreading factor as the size of the matrix based on channel estimation value information for each subcarrier.

Conclusion

5. Any response to this action should be **faxed** to (571) 173-8300 or **mailed** to:

Commissioner of Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Hand delivered responses should be brought to:

Customer Service Window
Randolph Building
401 Dulany Street
Alexandria, VA 22314

Response to Arguments

6. Applicant's arguments with respect to claim 1-6 have been considered but are moot in view of the new ground(s) of rejection.

7. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

/D. M./

Examiner, Art Unit 2419

/Chirag G Shah/

Supervisory Patent Examiner, Art Unit 2419

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